

Appl. No. 10/661,793
Amdt. dated 04/01/2008
Response to Office action of 01/03/2008

Attorney Docket No.: TS01-1037
N1085-90149

REMARKS/ARGUMENTS

Claims 8-17 are pending in the subject application. Claims 12-14 have been allowed and claims 8-11 and 15-17 rejected. Claim 8 is hereby amended. Applicants respectfully request re-examination, reconsideration and allowance of each of pending
5 claims 8-11 and 15-17 in addition to previously-allowed claims 12-14.

I. Allowable Subject Matter

Applicants acknowledge with appreciation, the Examiner's indication in paragraph 4 of the Office action, that claims 12-14 are allowed.

II. Rejection of Claims 8-11 and 15-17 Under 35 U.S.C. § 102(e)

10 In paragraph 3 of the Office action, claims 8-11 and 15-17 were rejected under 35 U.S.C. § 102(e) as being anticipated by Sahin, et al. (US Patent Publication 2003/0220708), hereinafter "Sahin." Applicants respectfully submit that these claim rejections are overcome for reasons set forth below.

15 Claims 8-11 and 15-17 include independent claims 8, 15 and 16. Each of these claims is distinguished from Sahin, because each of these claims recites the feature of:

means for creating an opening through a layer of etch resist material;

20 said feedback mechanism communicating with said means for creating an opening through a layer of etch resist material to control said critical dimension measurement of said opening.

25 Sahin provides no feedback mechanism that communicates with the means for creating an opening through a layer of etch resist material to control the CD (critical dimension) of the opening. In alleging that Sahin teaches this feature, the Office action refers to page 6, paragraph [0211] and steps 807 and 810 of Figure 8A(1) of Sahin. Sahin, in paragraph [0211], merely recites that "If the dimensions/profile of the patterned masking layer's feature are not within specification, . . . the modular controller 114 may

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direct the inventive system 100 to rework the wafer (step 107) as previously described." Step 107 was introduced in paragraph [0209] and the previous description referred to in paragraph [0209] is as follows: "to rework the wafer if possible (step 807). For example, if the wafer has a patterned masking layer formed with photoresist, the etch tool 102
5 may be employed to ash the photoresist layer and the cleaning tool 104 may be employed to remove any residual photoresist as previously described. The wafer may then be reprocessed via a lithography tool (not shown)."

Sahin clearly does not provide a feedback mechanism or any communication between the modular controller and the means for creating an opening through a layer of etch resist material, much less to control the CD of the opening. Sahin simply
10 identifies the wafer to be reworked and provides no communication, much less instructions, to a means for creating an opening through a layer of etch resist material, i.e. a photolithography tool. Applicants respectfully submit that one of ordinary skill in the art recognizes that means for creating an opening through a layer of etch resist
15 material comprises a photolithography tool. Applicants further respectfully submit that one of ordinary skill in the art recognizes that the ashing and cleaning tools referred to in paragraph [0209] of Sahin are clearly not means for creating an opening through a layer of etch resist material. Such tools merely remove the etch resist material.

Sahin merely identifies wafers that are out of specification limits, and calls for
20 their rework, and hopes that the CD will be within specification limits upon rework. Sahin provides no instruction or correction to the photolithography tool to assure that the CD's are in spec, i.e. it does nothing to control the CD's of the reworked wafer. The claimed invention, in contrast, goes a step further and provides that the feedback mechanism communicates with the means for creating the opening to control the CD of
25 the opening formed through the etch resist material. This feature is supported in the originally-filed specification, for example, on page 17, lines 7-10, which recite: *if the opening (ADI CD) that has been created is too small, a correction is implemented to this too small an opening such that a larger opening (ADI CD) will be created.* This

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feedback communication is also reflected in the Figures. In particular, FIG. 3A shows software link 44 that provides communication from the evaluation subsystem 42 to the entry point 32 of the photoresist control function 30 from where the data is advanced to the adjustment subsystem 34.

5 In summary, Sahin provides no feedback communication, much less feedback communication to the means that creates the opening in the layer of etch resist material, much less still feedback communication to the means that creates the opening in the layer of etch resist material for controlling the CD's of the opening, as in the claimed invention.

10 Each of independent claims 8, 15 and 16 is therefore distinguished from Sahin for at least these reasons.

Independent claim 8 has been amended to further distinguish Applicants' invention. In particular, claim 8 recites the features of:

15 said feedback mechanism communicating with said means for creating an opening through a layer of etch resist material to control said critical dimension measurement of said opening by implementing corrections in said means for creating an opening in said layer of etch resist material;

Independent claim 8 now more explicitly recites features not provided by Sahin.
20 Since Sahin does not provide a feedback mechanism that communicates with the means for creating an opening through the layer of etch resist material, much less a feedback mechanism that communicates with the means for creating an opening through the layer of etch resist material to control the CD of the opening, Sahin certainly cannot and does not provide the above-reproduced features of doing so by
25 implementing corrections as in amended independent claim 8.

Independent claims 8, 15 and 16 are therefore distinguished from Sahin for at least these reasons and the rejection of these claims under 35 U.S.C. § 102(e) as being anticipated by Sahin, should be withdrawn. Claims 9-11 depend from claim 8 and claim

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17 depends from claim 16, each of these claims distinguished from Sahin by virtue of their respective dependencies. The rejection of claims 9-11 and 17 under this Section, should also be withdrawn.

CONCLUSION

5 Based on the foregoing, each of pending claims 8-17 is in allowable form and the application in condition for allowance, which action is respectfully and expeditiously requested.

The Assistant Commissioner for Patents is hereby authorized to charge any fees necessary to give effect to this filing and to credit any excess payment that may be
10 associated with this communication, to Deposit Account 04-1679.

Respectfully submitted,

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Mark J. Marcelli, Reg. No. 36,593
Attorney for Applicant

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DUANE MORRIS LLP
101 West Broadway, Suite 900
San Diego, CA 92101
25 Telephone: (619) 744-2200
Facsimile: (619) 744-2201